

## Claims

1. Method for determining a routing for radio transmission between a first (MNS) and a second (MND) radio station of a radio communications system,  
with the radio communications system, as well as the first (MNS) and the second (MND) radio station, comprising a plurality of further radio stations (MNX, CNS, CND, CNX),  
with the routing being routed via at least two of the further radio stations (MNX, CNS, CND, CNX), so that information can be transferred between the first (MNS) and the second (MND) radio station over the routing using radio,  
with a radio device (BS) being present to which adjacent relationships between radio stations (MNS, MND, MNX, CNS, CND, CNX) of the radio communications system are known, characterized in that  
it comprises the following steps:
  - (a) the radio device (BS) determines a part of the radio stations (CNS, CND) of the routing in response to a request (AN) to determine a routing between the first (MNS) and the second (MND) radio station,
  - (b) the radio device (BS) sends the first radio station (MNS) and/or the second radio station (MND) radio station identification information relating to one or more radio stations of the part of the radio stations (CNS, CND) in each case.
2. Method in accordance with claim 1,  
characterized in that  
after the radio station identification information has been sent by the radio device (BS), radio stations (MNS, MND, MNX, CNS, CND, CNX) determine the remaining radio stations (MNX) of the routing between the first (MNS) and the second

(MND) radio station.

3. Method in accordance with claim 1 or 2,  
characterized in that  
the radio device (BS), to determine the radio stations of  
the part of the radio stations (CNS, CND) of the routing,  
selects these radio stations (CNS, CND) from a subset (CNS,  
CND, CNX) which it has defined of those radio stations in  
relation to which adjacent relationships are known to the  
radio device (BS).
4. Method in accordance with one of the claims 1 to 3,  
characterized in that  
the radio device (BS) sends the first radio station (MNS)  
radio station identification information relating to a  
third radio station (CNS) of the part of the radio stations  
(CNS, CND) and does not send the second radio station (MND)  
any radio station identification information relating to a  
radio station of the part of the radio stations (CNS, CND).
5. Method in accordance with claim 4,  
characterized in that
  - the first radio station (MNS), after receiving the  
radio station identification information relating to  
the third (CNS) radio station. initiates a method for  
determining a routing between the first (MNS) and the  
third (CNS) radio station and
  - the third radio station (CNS) initiates a method for  
determining a routing between the third (CNS) and the  
second (MND) radio station.
6. Method in accordance with one of the claims 1 to 3,  
characterized in that
  - the first radio station (MNS) after receiving radio  
station identification information relating to a

- plurality of radio stations of the part of the radio stations (CNS, CND), initiates a method for determining a routing between the first radio station (MNS) and a radio station of the plurality of radio stations, and
- at least some of the radio stations of the plurality of radio stations each initiate a method for determining a routing
    - between the relevant radio station of the plurality of radio stations and another radio station of the plurality of radio stations or
    - between the relevant radio station of the plurality of radio stations and the second radio station (MND) or
    - between the relevant radio station of the plurality of radio stations and a radio station of the part of the radio stations not included in the plurality of radio stations

7. Method in accordance with one of the claims 1 to 3, characterized in that
- the radio device (BS) sends the first radio station (MNS) radio station identification information relating to a third radio station (CNS) of the part of the radio stations (CNS, CND) and
- sends the second radio station (MND) radio station identification information relating to a fourth radio station (CND) of the part of the radio stations (CNS, CND).
8. Method in accordance with claim 7, characterized in that
- the first radio station (MNS), after receiving the radio station identification information relating to the third radio station (CNS), initiates a method for

- determining a routing between the first (MNS) and the third (CNS) radio station, and
- the second radio station (MND), after receiving the radio station identification information relating to the fourth radio station (CND), initiates a method for determining a routing between the second (MND) and the fourth radio station (CND).
9. Method in accordance with one of the claims 7 or 8, characterized in that
- the third radio station (CNS) initiates a method (ROUTE) for determining a routing between the third (CNS) and the fourth (CND) and/or
  - the fourth radio station (CND) initiates a method (ROUTE) for determining a routing between the fourth (CND) and the third (CNS) radio station.
10. Method in accordance with one of the claims 7 to 9, characterized in that
- the radio device (BS) additionally sends the first radio station (MNS) radio station identification information relating to the fourth radio station (CND) and/or additionally sends the second radio station (MND) radio station identification information relating to the third (CNS) and the first (MNS) radio station.
11. Radio device (BS) for a radio communications system, especially for executing a method in accordance with one of the claims 1 to 10,
- with the radio communications system, in addition to a first (MNS) and a second (MND) radio station, comprising a plurality of further (MNX, CNX, CNS, CND) radio stations, with
- Means (M1) for storing adjacent relationships between

radio stations (MNS, MND, MNX, CNX, CNS, CND) of the radio communications system, and

- Means (M2) for determining a part of the radio stations (CNS, CND) of a routing between the first (MNS) and the second (MND) radio station in response to a request (AN) for determining a routing between the first (MNS) and the second (MND) radio station, with the routing being routed via at least two of the further radio stations (MNX, CNX, CNS, CND), so that information is able to be transmitted between the first (MNS) and the second (MND) radio station over the routing using radio, and
- Means (M3) for sending one or more messages (ID1, ID2) with radio station identification information relating to one or more radio stations of the part of the radio stations (CNS, CND) to the first radio station (MNS) and/or with radio station identification information relating to one or more radio stations of the part of the radio stations (CNS, CND) to the second radio station (MND).